

What Is Claimed Is:

1. A read/write head for a disk drive, the head being suitable for recording data in adjacent magnetic recording media, the media including a first layer for recording data and a second layer that is a soft underlayer (SUL) to return magnetic  
5 flux to the read/write head, the head comprising:  
a substrate;  
a write element formed on top of the substrate, the write pole being configured to record data in adjacent media; and  
a read element formed on top of the write element, on an opposite side of the  
10 write element from the substrate.
2. A read/write head as defined in claim 1, wherein the write element includes a write coil that coils around another portion of the write element.
3. A read/write head as defined in claim 1, wherein the read element includes a pair of read shields and the write element includes a write pole that is magnetically  
15 connected to one of the pair of read shields.
4. A read/write head as defined in claim 3, wherein the write element includes a write coil that coils around a portion of the write element that connects to the one of the pair of read shields.
5. A read/write head as defined in claim 4, wherein the write coil is a pancake  
20 coil.
6. A read/write head as defined in claim 4, wherein there are no other write coils.

7. A read/write head as defined in claim 3, wherein the distance from the write pole to the soft underlayer falls within a range from approximately equal to half the distance from the nearest read shield to the write pole to approximately twice the distance from the nearest read shield to the write pole.

5           8. A read/write head as defined in claim 1, wherein the read element includes a pair of read shields and the write element includes a write pole and a write shield that is magnetically connected to the write pole.

          9. A read/write head as defined in claim 8, wherein the write element includes a coil that coils around a portion of the write element that connects the write shield to  
10 the write pole.

          10. A read/write head as defined in claim 8, wherein the write coil is a pancake coil.

          11. A read/write head as defined in claim 8, wherein there are no other write coils.

15           12. A read/write head as defined in claim 8, wherein the distance from the write pole to the soft underlayer falls within a range from approximately equal to the distance from the write shield to the write pole to approximately twice the distance from the write shield to the write pole.

          13. A read/write head as defined in claim 1, wherein the write element is  
20 formed directly on the substrate.

          14. A read/write head as defined in claim 1, further including a layer of material between the write element and the substrate.

15. A read/write head as defined in claim 14, wherein the layer of material is an electrically conductive material.

16. A read/write head as defined in claim 14, wherein the layer of material is an electrically insulating material.

5        17. A read/write head as defined in claim 1, wherein the adjacent magnetic recording media is caused to move relative to the read/write head in a direction that causes a given portion of media to pass first by the write pole and then by the magnetoresistive sensor.

10        18. A read/write head as defined in claim 1, wherein the head is configured to perpendicularly record data in the first layer of the adjacent magnetic recording media.

19. A read/write head for a disk drive, the head being suitable for recording data in adjacent magnetic recording media, the media including a first layer for recording data and a second layer that is a soft underlayer (SUL) to return magnetic flux to the read/write head, the head comprising:

5           a substrate;

          a write pole formed proximate to the substrate, the write pole having a magnetic via section;

          a first read shield proximate to the write pole and located on an opposite side of the write pole from the substrate, the first read shield being magnetically connected  
10       to the magnetic via section of the write pole;

          a second read shield proximate to the first read shield and located on an opposite side of the first read shield from the write pole; and

          a magnetoresistive sensor located between the first and second read shields.

20. A read/write head as defined in claim 19, further including a write coil  
15       that coils around the magnetic via section.

21. A read/write head as defined in claim 20, wherein the write coil is a pancake coil.

22. A read/write head as defined in claim 20, wherein there are no other write coils.

20       23. A read/write head as defined in claim 19, wherein the distance from the write pole to the soft underlayer falls within a range from approximately equal to half the distance from the nearest read shield to the write pole to approximately twice the distance from the nearest read shield to the write pole.

24. A read/write head as defined in claim 19, wherein the write element is formed directly on the substrate.

25. A read/write head as defined in claim 19, further including a layer of material between the write element and the substrate.

5           26. A read/write head as defined in claim 25, wherein the layer of material is an electrically conductive material.

27. A read/write head as defined in claim 25, wherein the layer of material is an electrically insulating material.

28. A read/write head as defined in claim 19, wherein the adjacent magnetic  
10   recording media is caused to move relative to the read/write head in a direction that causes a given portion of media to pass first by the write pole and then by the magnetoresistive sensor.

29. A read/write head as defined in claim 19, wherein the head is configured to perpendicularly record data in the first layer of the adjacent magnetic recording  
15   media.

30. A read/write head for a disk drive, the head being suitable for recording data in adjacent magnetic recording media, the media including a first layer for recording data and a second layer that is a soft underlayer (SUL) to return magnetic flux to the read/write head, the head comprising:

5           a substrate;

          a write pole formed proximate to the substrate, the write pole having a magnetic via section;

          a write shield formed proximate to the write pole and located on an opposite side of the write pole from the substrate, the write shield being magnetically  
10   connected to the magnetic via section of the write pole;

          a first read shield proximate to the write shield and located on an opposite side of the write shield from the substrate;

          a second read shield proximate to the first read shield and located on an opposite side of the first read shield from the write pole; and

15           a magnetoresistive sensor located between the first and second read shields.

31. A read/write head as defined in claim 30, further including a write coil that coils around the magnetic via section.

32. A read/write head as defined in claim 31, wherein the write coil is a pancake coil.

20           33. A read/write head as defined in claim 31, wherein there are no other write coils.

34. A read/write head as defined in claim 30, wherein the distance from the write pole to the soft underlayer falls within a range from approximately equal to half

the distance from the write shield to the write pole to approximately twice the distance from the write shield to the write pole.

35. A read/write head as defined in claim 30, wherein the write pole is formed directly on the substrate.

5           36. A read/write head as defined in claim 30, further including a layer of material between the write pole and the substrate.

37. A read/write head as defined in claim 36, wherein the layer of material is an electrically conductive material.

10           38. A read/write head as defined in claim 36, wherein the layer of material is an electrically insulating material.

39. A read/write head as defined in claim 30, wherein the adjacent magnetic recording media is caused to move relative to the read/write head in a direction that causes a given portion of media to pass first by the write pole and then by the magnetoresistive sensor.

15           40. A read/write head as defined in claim 30, wherein the head is configured to perpendicularly record data in the first layer of the adjacent magnetic recording media.